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Notes

on

Materia Medica & Pharmacology

delivered

by

Dr. J. B. Wood

in the

University of Pennsylvania

1857

Vol. 1



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— Notes —

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Materia Medica & Pharmacy

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## Lecture 1st Page. 1

The Science which it is my duty to teach is Materia Medica & Pharmacy. Materia Medica is the science which treats of medicines. — Pharmacy the art of preparing them for use, the first forms the primary the second the subsidiary portion of the course. Some knowledge of the manner of preparing & compounding drugs should be possessed by the practitioner of Medicine, who may be called upon to perform the offices of the Apothecary, in his absence, either in the country or under other circumstances, & as he directs the apothecary he should understand practically what he directs to be done;

Materia Medica treats of medicines. It is difficult to define with precision, what is meant by a medicine. If it be stated that it is a substance used in the cure of diseases, Articles of



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Food, or surgical instruments, would be ranked with medicines, as these are remedies, <sup>some medicines</sup> sometimes used, but they are not so. I would define medicines to be substances capable of producing, as an ordinary result, and by their own inherent power, certain modifications of the vital functions, which renders them applicable in the cure of diseases"

There are numerous physical influences which in their ordinary effect, produce no disturbance to the functions of life & yet these may become exceedingly operative in deranging them, as heat, Atmospheric air, food & drink, & were it not for the power communicated to <sup>them</sup> the dagger, or <sup>of the assassin</sup> knife of the surgeon would be <sup>of little avail</sup> ~~destructive of power~~ yet they are not medicines, although <sup>they</sup> are capable of modifying & affecting the vital functions. Poisons also are capable of producing



disturbance to the functions of life, but are destitute of remedial energy, in numerous instances. —

There are certain substances as arrow root, tapioca &c which are nutritive in their powers, & are not strictly speaking medicines — yet from their being used for the sick are treated of as such.

The objects of attention for the physician as regards medicines are.

1. Their modes of collection & preparation for the market & their commercial history, which he should understand as an accomplishment — & it may sometimes be useful.

2. Their sensible properties, as taste, smell, appearance &c. These should be understood in order to discriminate between drugs & recognise them when inspected. It has been maintained that there is a certain relation between the physical sensible prop-



ities and the powers which they possess over the functions of vitality. Thus hot pungent substances are asserted to be Stimulants, bitter substances tonic, sweet substances demulcent, & there is considerable truth in this, but it may not be the case, as in Gamboge which has little taste. It is necessary to make yourselves familiarly acquainted with Medicines by handling them.

3- Their chemical composition - should be understood, in order to know whether they are soluble or insoluble, in what menstrua they are capable of being dissolved, how they will be affected by heat <sup>and</sup> moisture &c. The reactions between them and others must be known, as well as what constitutes their active principles, so that incompatibles may be avoided.



4- It is necessary to understand the effects which medicines are capable of producing upon the healthy organs & functions, & the relations they bear to the human system before advancing towards their applicability to disease & from this power can be deduced their value.

5- Their capability of deranging & disturbing the functions of life, inordinately, or their poisonous effects are also to be considered.

6- Their effects in morbid states of the system & the general indications they are calculated to answer in the treatment of disease comprised under Therapeutics.

7- Their particular applications in cases where they are not comprised under any particular rule. <sup>this is</sup> Rational Empiricism.

8- Dose, Mode of administration the officinal preparations which are made of them & their exten-



<sup>16</sup>  
Pharmacopoeia preparatives are to be studied.

A Pharmacopoeia is a code of rules published by authoritative bodies for the preparation of medicines & recognition of standard remedies.

Advantages - uniformity of strength & certainty in the direction of pharmaceutical preparations. & avoidance of perplexity or embarrassment in their use. & the establishment of a correct nomenclature.

<sup>the</sup>  
Term officinal defined, recognised by some pharmacopoeia. Difference between <sup>a</sup> Dispensatory & Pharmacopoeia.

Preparatory knowledge required - Zoology - not requisite, as the animal substances are few. Mineralogy. crude substances - the objects of this science are not brought before the physician, but he ought to study them at his leisure.



Botany of more importance, -  
as a large proportions of medi-  
cines are obtained from the  
vegetable kingdom, - in order  
to recognise plants, to introduce  
new, or substitute in the coun-  
try & describe new discoveries.  
To understand the nomen-  
clature of the Pharmacopoeia -  
where vegetable productions are  
concerned.

Chemistry essential - to acquire  
a knowledge of the composi-  
tion of medicines, their man-  
ufacture, the changes which they  
undergo from heat & moisture -  
their incompatibles, & to know  
what are the proximate prin-  
ciples of compound substances -  
There are two kinds of prin-  
ciples. proximate & ultimate -  
the first are distinct compound-  
substances of which a compound-  
is formed, as sugar, tannin, &c  
& into which it can be resolved,

The second, are the simple —  
constituent principles into which  
all bodies are finally reduced, —  
as Carbon, hydrogen &c.

Weights & measures —

Two kinds used —

Apothecaries — & Troy or Apothecaries —

The Druggist buys with the <sup>former</sup> ~~first~~  
& sells with the latter.

Apothecaries —

$$1 \text{ lb} = 16 \text{ oz} = \frac{256}{16} = 16 \text{ gr}$$

$$1 \text{ oz} = \frac{1}{16} \text{ lb} = 480 \text{ gr}$$

$$1 = 27.36$$

Troy —

$$1 \text{ lb} = 12 \text{ oz} = 96 \text{ dr} = 288 \text{ gr} = 5760 \text{ m}$$

$$1 \text{ oz} = 3 \text{ dr} = 24 \text{ gr} = 480 \text{ m}$$

$$1 \text{ dr} = 3 \text{ gr} = 60 \text{ m}$$

$$1 = 20 \text{ m}$$

Apothecaries Measure — used in  
dispensing medicines —

$$1 \text{ gal} = 8 \text{ pts} = 128 \text{ fl oz} = 1024 \text{ dr} = 81440 \text{ m}$$

$$1 \text{ pt} = 16 \text{ fl oz} = 128 \text{ dr} = 7680 \text{ m}$$

$$1 \text{ fl oz} = 8 \text{ dr} = 480 \text{ m}$$

$$1 \text{ dr} = 60 \text{ m}$$

The disproportion between Apothecaries & Troy is  $\frac{1}{4}$  — so that in dispensing medicines there would be considerable differ-



ence produced by using them indiscriminately. A great care should be taken to express fluid ounces by measure, otherwise in the exhibition of articles of different specific gravities, if weights were taken, more or less would be given than was intended, as for instance ether, which is light, sulphuric acid, which is heavy, & this is greater if the French or Paris weights be used.

Graduated measures are used of standard authority, & for minimis a minim glass; difference between minimis & drops. drops may <sup>measure</sup> ~~weigh~~ a minim, or two may be required, their size depends upon the mouth of the bottle from which dropped & on the density or tenacity of the liquid. A tube with a piston, the end attenuated to a point is used for drops sometimes.

Teaspoon, Lattispoon, Dessert spoon & their capacities. —



## — Lecture II —

It is proper, that I should in the first instance direct my ~~exertions~~<sup>exertions</sup> ~~attention~~ to instruct you in the general circumstances connected with medicines, & afterwards take them up in detail. With this design I shall commence with the modus operandi of medicinal bodies. — or to be more explicit, to ascertain the manner in which they produce their effects upon the organic system. The inherent power by which medicines are capable of affecting the parts & organism to which they are applied is unknown to us, we can only determine it by its effects, & from these deduce the fact of its existence. The effects of medicines upon the system are primary ~~in~~ <sup>+</sup> secondary, the first being



the result of their immediate  
action upon it, the second  
being remote, and which  
follow the original & charac-  
teristic impressions, in con-  
sequence of certain physiolo-  
gical laws.\*

From the <sup>primary</sup> impression of medi-  
cines one of three events must  
ensue. 1st they are brought  
in contact with a part of the  
body & extend their influence  
over the system to different  
parts remote, by means of neu-  
rous communication. 2d They  
may enter the <sup>blood vessels</sup> ~~circulation~~ &  
act through the medium of the  
circulation. 3d They may act  
exclusively in the neighbourhood  
of their application, or produce  
a local impression.

To each of these three I shall  
advent.

\*A purgative may be adduced, the  
primary effects, are the evacuation  
of the bowels & increase of mucous discharge.  
The secondary the relief of head ache.



But then, by Sympathy. It is well known that when impressions are made upon one part, they are conveyed to, & affect another, with which they are in close sympathy. Thus the impression made upon the stomach affects the head; & the converse of this, a blow upon the head affects the stomach. The liver is affected through the skin, & blows upon the testes enervate the whole system. The instruments of this mode of operation are the nerves through which all impressions are conveyed. But it is not necessary that we should be enabled to trace Direct nervous communication between the organs which thus hold certain relations to each other, a central nervous organ may exist between them



which may serve as the bond-  
of union, thus may be the  
brain or the nervous gan-  
glia, thus impressions made  
upon the skin are conveyed  
to the brain, & ~~from~~ thence  
reflected to the mucous surfa-  
ces, or in the case of the  
abdominal organs, impres-  
sions made on one may be  
communicated to others through  
the ganglia of the symp <sup>athet-</sup>  
ic nerve, from which they are  
all supplied with nervous in-  
fluence, <sup>as in the case of the stomach & liver</sup> or there may be direct  
connection by means of nerves  
& these serve for transmission,  
forming an immediate sym-  
pathy ~~as in the case of the~~  
~~stomach & liver~~. <sup>its</sup> An instance  
of this snuff may be addu-  
ced, from its effects upon the  
lungs & diaphragm & <sup>parietes</sup> thoracic, it  
is through the centre of the nerves  
of expression, while the in-



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creased flow <sup>of</sup> the bile, when  
the stomach is nauseated  
is an instance of direct as the  
liver is influenced through the  
direct communication of the  
nerves supplying both. This oc-  
curs when emetic substances  
are taken. The relief of stran-  
gury by anodyne enemata is  
an other proof, here the pain  
is allayed more speedily &  
with more certainty than if  
an anodyne was introduced  
into the stomach. It is in con-  
sequence of the contiguous po-  
sition of the bladder & rectum  
or contiguous sympathy.

2d By means of the circula-  
tion.

The Humoral pathologists be-  
lieved that as all diseases  
arose from a deranged state  
of the blood, that medicines  
operated by changing & impro-  
ving its character. <sup>that</sup> This was



the only way in which they<sup>15</sup>  
produced their effects. After  
this the opposite opinion was  
proached on, the blood was  
denied as having ~~any~~ agency  
in the effects of medicines which  
were efficient through the solids  
alone & that if purchased any  
absorption of them took place,  
the glands were placed as  
sentinels to intercept them.  
But at this time, a different  
view has been taken of the  
case from the facts which  
have been produced. The  
supposition that medicines  
are absorbed is supported by  
the following facts. - Copartan  
when taken into the stomach  
is detected in the urine, as  
also Spt Serpentina. Garlic is de-  
tected in the urine & in the  
exhalations from the lungs.  
The flesh & milk of animals -



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becomes galkicky, <sup>the urine</sup> Madders  
discolours the bones, <sup>Rhubarb also</sup> sul-  
phur blackens silver worn  
on the person of one taking  
it, Nitrate of silver blackens  
the skin, Milk of nurses af-  
fects infants, hence it is possi-  
ble to physic the child through  
the nurse. I knew a case  
where the child was thrown  
into convulsions from the  
irritation produced upon the  
stomach by the milk of the  
mother who had taken Cores-  
tive syrup - it had previously  
been attacked in the same  
way when given <sup>directly</sup> to itself.

Moreover saline substances -  
are detected in the urine  
after they have been taken  
into the stomach, by means  
of chemical reagents, as ferri-  
cyanate of potassa. Brodhanston  
detected this salt in two hours  
& it has been repeatedly tested



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under the same circumstances with the same results. It is not necessary that a direct channel should exist between the stomach and the organ which gives evidence of its power to eliminate these substances, as if they exist in the blood <sup>it</sup> they may eliminate them, but it has been contended that the blood has a homogeneous nature which could not admit of the introduction of these substances unchanged, and it has been supposed that they are decomposed, form part of the blood & then are recomposed by the organ to which they are directed, from the elements thus introduced. But it may be asked if the blood is thus homogeneous, & substances are decomposed & recomposed



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why are not others formed  
as well as these medicines—  
as for instance why is not  
~~patata~~ *fecula* reformed. This  
doctrine is further explained  
by supposing that the im-  
pression made upon the  
stomach is conveyed by sym-  
pathy to the organ (the kidneys  
for instance) & causes it to

take on this elaborative pro-  
cess. <sup>forming the same substances that produced</sup> There are some direct facts  
<sup>the impression.</sup> by which this idea is disproved,

as for instance, if the nitrate of  
silver produced an effect upon  
the stomach & does not enter  
the blood vessels, where are the  
elements of nitrate of silver to dis-  
colour the skin.

But these substances have  
actually been detected in  
the blood. Magendie discov-  
ered alcohol in a dogs blood,  
& Tiedeman & Emetin were  
equally successful in their  
researches.



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Dr Harlan Lawrence & Coates found ferrocyanate of potassa in the vena portarum & in the blood.

It is also known that this absorption goes on with great rapidity. i. h. art has been discovered in the wine in half an hour, & in a dog this was the case in a few minutes.

It is not improbable that many substances act in both these ways, particularly such as produce an effect upon the brain & nervous system, affecting first the nerves & then entering into the circulation, this when taken into the stomach a certain effect is produced immediately, & as the substance becomes absorbed this effect becomes strengthened & deepened.



and may we not explain in this way the peculiarities of certain substances as for instance opium, which may produce its excitant influence by means of the nerves & its saprofic through absorption.

Other surfaces besides the stomach &c are capable of absorbing. Prof. Myer <sup>quadruped</sup> determined that the bronchial mucous membrane did so in a high degree, as did Dr. Harlan Lawrence & Coates - who also found that the serous membranes were in like manner capable. <sup>Pleura & abdomen injected</sup> The skin is well known to absorb when deprived of its cuticle, from the reduction of the amount of substance placed upon it. But it has been denied that it can absorb when the cuticle is allowed to remain - & it is stated that the introduction of mercurials from the out



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ment is mechanical, by means  
of the stimulus from friction.  
without which it would not  
be affected, & it has been as-  
serted that when the body is  
placed in a saline bath  
the saline ingredient is not  
diminished, or that the vessels  
are not distended if the body  
is allowed to remain in a  
warm water bath. —

It has been ascertained how-  
ever that <sup>when</sup> alcohol & madder  
are applied to the skin the  
urine is affected by them &  
Edwards has proved that there  
is absorption going on at all  
times from the moisture of the  
atmosphere, and a striking  
fact is presented in diabe-  
tes where, more fluid is void-  
ed than taken in, for a  
length of time, & this can only  
be explained upon Edwards Expe-  
— iments



Many remedial means are adopted on this supposition, without the removal of the skin; as Cataplasms, & Schubart is an instance of its absorptive. But Must acid touches the gums - Tobacco -  
~~Wetness~~ - Made some experiments upon camphor, must be applied to the leg taking care that none should be inhaled & they were found in the serum of the blood & in the urine. —

Some resistance is made by the skin to the absorptive of substances & it is a happy circumstance that it is so, otherwise disagreeable results would be of common occurrence, but this resistance is diminished by cataplasms, fomentations &c. Hence we are to conclude that in both cases with & without the removal of the skin, absorption can take place.



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Absorption of medicines & ra-  
pid, according to the part &  
the state of the system.

It takes place most rapidly from  
the air cells—

Next from Mucous membranes—  
& least from the skin.

& it is also in an inverse pro-  
portion to the state of the  
circulation. Hence the ab-  
sorption & consequent action  
of diuretics & diaphoretics in  
dropsy may be quickened by  
bleeding, although in the last  
case bleeding is itself a dia-  
phoretic.

In order to enter the circulation,  
medicines must be soluble in  
water, capable of mixing with the  
blood & not corrosive, the re-  
verse of these will not be ab-  
sorbed, thus olive oil, injected  
into the rectum of a dog re-  
mained there several days, while  
alcohol & water, was taken up  
by the absorbents, Mercurial oint



Why <sup>21</sup>gaseous substances are not absorbed -  
Ment may seem an exception.  
Absorption is maintained to take  
place in two ways, by the veins -  
and by a species of filtration -  
(endosmose)

Magendie found that the veins  
carried on absorption, but al-  
though it is proved by his ex-  
periments that the veins carry  
the absorbed matters into the  
general circulation, the question  
is whether their extreme ram-  
ifications take them up, or whether  
the absorbents do & carry them  
into the veins. Some experiments  
have been made by mercurial  
injections into the absorbents which  
would tend to prove that they  
emptied into the veins. I am  
however of the opinion that  
it is the veins which absorb -  
As regards infiltration, we  
are as yet too little acquain-  
ted with it & it is too me-  
chanical for my ideas upon



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the subject, as I believe that  
absorption is a vital process,  
requiring more power. This may  
be the case as regards the en-  
ticle & there is no doubt that  
it takes place after death as  
in the subsidence of the fluids  
to the most depending part of  
the body, or just before death,  
as in typhus fever, or where  
there is great weakness, as the  
profuse night sweats.

3- Local operation, as <sup>where</sup> castor  
oil is taken or olive oil ap-  
plied the effect is upon the  
part with which the come in  
contact. Corrosive substances  
act locally if strong enough or  
if in sufficient amount to de-  
stroy the parts for in this way -  
they prevent absorption, but if  
diluted they are apt to effect  
the system as for instance ar-  
senic.

In their primary action, medi-



cures differ greatly as to the parts which they affect, each particular medicine or class having a tendency to act on some one portion of the system - some one organ or set of organs - more than others. They seem to possess an elective affinity & this is exhibited no matter where they are applied, thus - ipecacuanha purges, gamboge - whether introduced into the stomach or into the blood. We can only explain this tendency to direct themselves to particular organs, by supposing - that each organ has <sup>a</sup> certain susceptibility which places it in <sup>a peculiar</sup> relation to the medicine - & that the new stimulus of the medicine is required to awaken this susceptibility. While <sup>by</sup> others it is not <sup>affected</sup> ~~in~~ <sup>unusually</sup>, thus - the bowels contract spasmodically from shubarb, but digitalis is inert as regards them.



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while this stimulates the kidneys, <sup>and</sup> while ~~the~~ <sup>the</sup> ~~sub~~ <sup>sub</sup> ~~art~~ <sup>art</sup> does not. This susceptibility must be received as an ultimate fact which cannot be explained. & it may be called the particular sense of the organ requiring like the other senses its own stimulus. —

### Lecture III

In the last lecture I spoke of the peculiar susceptibilities of particular organs; the tendency of medicines to act upon particular parts is not because they are directed to those parts, or reach any one exclusively, as they enter the circulation & are brought to bear upon all parts, but because they act upon the susceptibility of a particular organ <sup>with</sup> which they have a relation



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and are capable of calling-  
this susceptibility into action.  
It is upon this tendency to  
particular parts that a  
ground of distinction exists-  
between medicines.

The organic frame may be  
said to be composed of three  
systems which may be ter-  
med general, viz the, ner-  
vous, sanguine & absorbent.-  
these never exist alone, but-  
are blended together in the  
structure of all parts of the  
frame & are necessary for their  
existence. Besides these there-  
are to be found certain or-  
gans which perform certain  
functions, & of these organs-  
the individual is composed.  
these organs are composed  
of the three previously men-  
tioned systems. Medicines-



which affect the systems  
may be termed general  
as their action is the same  
in all parts wherever they  
are applied, and their sym-  
patrics are so interwoven, that  
one can not be affected with-  
out some participation by others,  
thus opium acts upon the  
nervous system, carbonate of  
ammonia upon the vascular  
system, and iodine upon  
the absorbent system. Those  
medicines which affect the  
organs may be said to be  
focal in their primary  
action, thus rhubarb acts  
upon the bowels, Quinine  
upon the skin, squill upon  
the kidneys. Senega upon the  
lungs. From this, general &  
local remedies may be sub-  
divided according as they



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may operate on some one-  
of the organs or system-  
of organs in preference to  
others.

It has been argued that -  
medicines produce their  
effects, varied only in degree,  
or by the peculiar tissue to  
which they are applied &  
this is the ground of the-  
physiological doctrine; the  
opinion however is most-  
philosophic that the action  
of medicines differ not only-  
as to the part which they ~~are~~  
disposed to effect, but also-  
in the nature of their pri-  
mary action upon the same-  
part. thus tartar emetic  
ulcerates, a blister raises a-  
vesicle, while mustard  
reddens the skin. Now it -  
is much more reasonable  
to suppose, that these differ-



The first of these is the fact that the  
 species which are most numerous in the  
 system, which are the most common  
 to effect these results, rather than  
 those that they all have  
 the same action, the plan  
 of which is very ac-  
 cording to the degree of the  
 perfection of the system, the  
 least numerous,  
 but that specific action of  
 the system which direct the  
 particular organs, & effect  
 the particular organs  
 effect the particular organs  
 the for the system, in the  
 the acceptance of the system  
 specific connection, the not only  
 the system, the that the  
 the system, the that the  
 effect different organs, the  
 the system, the that the  
 the system, the that the



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ences are attributable to some specific inherent mode of action, which enables them to effect these results, rather than that they all have the same action, the phenomena of which vary according to its degree, & the peculiar tissue to which they direct themselves.

But that specific action of Medicines which directs them to particular organs, & to affect them in particular ways is different from specific remedies for disease, in the common acceptation of the term; specific remedies do not exist. Admitting then that Medicines have a tendency to affect different organs, & to produce different effects, upon the same organ, there are two modes of operation which



are most common, these are  
stimulation or sedation. -

Stimulant are those which  
excite the system or some part  
of it above the natural stan-  
dard, while sedative depress-  
it.



34.  
The greater number of medicines are stimulant, & perhaps <sup>also</sup> may be so applied as to produce a direct excitement of some part or organ of the body; it has been contended that they all are invariably so in their primary action. But it is not deducible from this that there are no direct sedatives.

It is ~~also~~ <sup>is</sup> a mistake to consider medicines essentially stimulant or essentially sedative - under all circumstances, they produce peculiar effects not only from their own peculiar nature, but in consequence also of the peculiar susceptibilities of the ~~the~~ <sup>body</sup> or its organs. Now these susceptibilities are not the same in different parts of the frame in health, nor even in the same part in different states of health; or



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under different circumstances of situation. A necessary inference is that the same medicine must operate differently in different parts of the body having these different susceptibilities & that even its operation upon the same part may vary with its susceptibility. There can be no difficulty therefore in understanding that a medicine may be either stimulant or sedative according to the part on which it acts, or to the condition of the system or some one of its organs, at the time of its action. As instances of these. Digitalis is a sedative to the heart and arteries - at the same time that it stimulates the kidneys, hence the susceptibility of the former leads to sedation, of the latter



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to stimulation, so that the  
medicine produces both -  
these effects. Tartar emetic -  
applied to the skin ulcerates -  
it, while it is a sedative to  
the heart arteries & nervous -  
system.

As an example of the differ -  
ent conditions of susceptibil -  
ity of a part. Cayenne pepper is -  
a powerful stimulant, but -  
applied to the throat when  
in a gangrenous state from  
malignant scarlatina it acts  
as a sedative.

Spt of Turpentine is a powerful -  
stimulant (but when applied  
to a burn it is sedative).

The quantity also affects the  
mode of operation of a sub -  
stance. Thus alcohol in  
small quantity, excites, in  
large quantities produces a  
sedative effect.



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Electricity is excruciating in quantity it overpowers. It has been argued that the latter result is from excessive stimulation, but we must judge from the effects which are evident. Is of opium.

From these views, medicines are either stimulant or sedative, according to the part, its state, or the quantity.

There are certain circumstances which modify the action of medicines by affecting the susceptibilities of the system or organs. these are 1st

disease. this should be always considered, as medicines are sometimes made to operate differently from their accustomed action in consequence. Thus opium which ordinarily constipates, if the bowels are contracted by colic, is capable of



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opening them.

Climate has considerable influence, not only in giving completion to diseases, but also in its effects upon the system, producing a state of things which if not disease, yet which comes close upon it. Thus in warm climates, the liver is rendered torpid from the impression of heat, and larger doses of calomel are made use of from necessity & from the exalted susceptibility in these same regions, mercurials & arterial stimulants are to be employed in smaller doses than in cold countries. The Hindoos would soon perish from the strong potations which are <sup>tolerated</sup> ~~borne~~ with perfect impunity by a Russ. In hot climates the necessity for animal food is less, as it is too stimulating, hence a vegetable diet is adhered to &



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in order to maintain the  
tone of the stomach spices  
are employed.

Made of living. A full liver  
who is plethoric and strong  
will bear more exposure than  
one who is confined to poor  
sparse diet, and when treat-  
ed for disease requires more  
active treatment, both in sed-  
ative measures or stimula-  
tion, and one accustomed  
to hard work will be ena-  
bled to bear more stimula-  
tion, as from alcohol, than  
the individual whose per-  
suits are sedentary.

Habit. This also is a modifying  
agent. It is possible from  
the habitual use of most  
medicines, so to become ac-  
customed to them, as <sup>to</sup> experi-  
ence little effect from them



in ordinary quantities & it will become necessary to increase the dose, as for instance opium, cathartics &c. A person visiting a malarious country will be liable to injurious effects, but after he becomes accustomed to its impression, he is stated to be acclimated, or in other words the pernicious influence is lost. If the dose is increased it is important to take care not to exceed the point beyond which it becomes dangerous, under these circumstances, the medicine must be changed to some one selected which has a similar mode of action, or else the part to which it is applied changed.

Under some circumstances the susceptibility is so constantly in action, that there is a



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second mode of existence -  
brought about in an organ  
or upon the system, and it  
becomes necessary to guard against  
the sudden withdrawal of  
the medicine which is habit-  
ual or the stimulus thus <sup>rendered</sup> ~~produced~~  
<sup>necessary</sup>. Opium eaters & drunkards  
are examples in whom it is  
 requisite to abstract gradually  
the stimuli. -

Besides these there are other  
considerations which form part  
of our being -

Age. Infants are more easily  
operated upon than adults as  
their vitality is more energetic,  
from their growing state. It is  
stated that the activity of me-  
dicinal substances is inversely  
as the magnitude of animals.  
thus what will kill a rat -



has no effect upon man &  
what will destroy a man  
will not affect an ox. So the  
activity is inversely as the age  
in the same animal, or as the  
growth. In infants heathful stim-  
uli <sup>are</sup> more operative, hence the  
same is the case with medi-  
cines. & it is necessary to dimin-  
ish the dose. The rule of  
Young is a good one viz -  
add the age to 12. & divide by  
the age. -  $1 + 12 = 13 - 1) 13 / \frac{1}{13}$  for one year. & so on -

with some medicines this is -  
too small, as in the instances  
of calomel. & castor oil, the  
latter being digested.

Old age, here the susceptibilities  
are reduced, from feebleness  
of the recuperative energies -  
but care should be taken  
not to increase the dose too



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far, as if the medicine exceeds  
its ordinary effects, prostration  
may result.

Sex - women from their pe-  
culiarity of constitution are  
to be differently treated from  
men, their several states as -  
pregnancy, the existence of  
the Catamenia &c modify treat-  
ment. Their susceptibilities are  
more alive, hence as a general  
rule smaller doses answer.

Temperaments are ~~added~~ to  
general rules. - as sanguine,  
nervous &c.

Idiosyncrasies. These are pecu-  
liarities which determine  
medicines to act differently  
from what they generally do -  
and are natural or acqui-  
red by disease, they should  
be attended to. Thus Spe-  
cuculantia in some individ.



44  
Uals produces invariably pu-  
king. I saw a case where the  
12<sup>th</sup> of a grain operated in-  
this way, repeatedly & dis-  
gusted. opium sometimes instead of  
producing sleep, brings about  
sleeplessness. Case of a lady-  
who supposed she was taking  
chubart, food sometimes -  
in the same way produces -  
an irregular disturbance, I  
saw a case where urticaria -  
was produced from raspberries.  
Mercury sometimes produces  
inordinate effects.

Food which would seem to be  
superfluous is occasionally the  
means of cure, as in the case  
of bacon & beans, allaying nau-  
sea, & I saw a case where  
roasted onions, allayed the  
same affection, so that this  
kind of craving is sometimes to -



be gratified. —

Mental operations, after the effects of Medicines. — Thus, in giving a patient an emetic he may be told of the intervention, & so of Quinia for chills. — But with anodynes the reverse, as the watching for the effect if in repeated doses will destroy its power, & so of bleeding to produce fainting. —

The recollection of an unpleasant medicine, will frequently produce the same effects as nausea. — from the principle of association.

The taste of the patient is to be consulted & medicines are to be rendered as pleasant as possible & he must be permitted to take his choice of no reason exists to the contrary, hence a variety of medicines should be at command.



Secondary effects of medicines. These are the changes which take place in any portion of the body, not produced by the immediate operation of the medicine, but dependent upon certain laws of the system which determine peculiar actions or conditions as the consequence of antecedent actions or conditions. - They are arranged under the following heads.

1. A state of depression following excitement. This is not available in disease but it affords a good therapeutic indication, viz not to withdraw the stimulus too rapidly, as for instance alcoholic stimuli, in drunkards, &c.







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2d. Sympathetic excitement, -  
arising from local inflam-  
mation. We see this constantly  
exhibited in disease, thus  
Pleurisy & other local affections  
produce a general sympathet-  
ic disturbance in the system  
under the form of fever. Al-  
cohol produces, a some what  
analogous condition which  
is evanescent, but blisters, &  
mustard plasters in some  
states of the system are capa-  
ble of kindling more or less  
febrile excitement.

There is a species of sympathy -  
which is called contagious as  
the effect is produced in the  
neighbourhood of the part to  
which the application is made.  
The enlargement of glands is an  
instance.

3. Revulsion. When increased action is aroused in a neighbouring or distant part, the original affection is removed, in consequence of a law of the system, it is transplanted as it were; thus a blister upon the stomach, when that organ is inflamed will remove it. Sinapisms in soot are applied upon the same principle. The object is to diffuse excitement which is maintained to be definite.



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4- Cessation of diseased  
action in consequence of  
removal of the cause. as  
in the case of Constipation  
producing head aches, the  
first being removed the sec-  
ond must follow, or as in  
the case of diarrhoea from  
constipation.

5- Efforts made by nature to  
repair the damage received  
in consequence of the appli-  
cation of medicines to the  
body. — as in the granulation  
& cicatrization following caustic  
applications &c.

Forms of medicines. —

In two states medicines are  
exhibited the solid & liquid.  
To the first belong powders, pills,  
traches, electuaries & confections.  
To the second, mixtures & solu-

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tion & under this head  
are included the official  
preparations designated as  
Infusions. Decoctions wines &  
Tinctures vinegars. Syrups Ec-  
leys & Exymels. Medicines  
are also used in the form  
of Liniments Unguents ointments  
ment Plasters & Cataplasms.

### Powders

These should not be made  
of substances which deliquesce,  
as for instance sulphur &  
<sup>they don't</sup> ~~deliquesce but effloresce~~ zinc &  
acet. plumb. or Carbonate of  
potassa. Such as are light are  
to be mixed with water, or if  
heavy with syrup or mucilage,  
as Specuankah & Carb Ferri.

### Pills —

should be made of non deli-  
quescent substances, or such as  
are not given in large doses,  
or pass through the bowels unat-  
tached.



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if made of too soft materials -  
they are apt to run together &  
some substances as the Sulphates  
of quinine with gum, become  
very hard from keeping. it is  
proper to make the latter with  
the extract of quinine. Liquids  
are not to be made into pills -  
unless the quantity is very mi-  
nute.

If efflorescent salts are given in  
pill it is necessary to drive  
off the water of crystallization,  
as for instance sulphate of  
iron.

Many substances as soft extracts -  
<sup>Rhubarb & aloes</sup>  
do not require any extraneous  
matters in their formation, -  
but others do, as powders, &  
gum & sugar are used the  
latter is best, as, the consistence  
is uniform, & if the first prepara-  
tion does not succeed with  
gum, the second fails, in con-  
sequence of the gum being de

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joined of its water, & the mass  
rumbling. —

Care should also be taken  
to have the added substances  
not incompatible.

Soap is sometimes used, as it  
is antacid, but it decomposes  
some substances as Calomel,  
& Tartar emetic, or acids.

Conserve of roses is sometimes  
used. —

Soft extracts are sometimes used  
as in the case of metallic  
powders, & substances of a na-  
ture similar to themselves,

Crumbs of bread as for Croton-  
oil, or corrosive sublimate which  
is first to be dissolved in  
water, which are in small  
doses. —

It is sometimes requisite to  
have a hard pill, when it  
is required that it should  
operate slowly & dissolve gradu-



ally, as an old opium pill.

In order to prevent pills from running together, it is requisite to cover them with powdered liquorice root, lycopodium or magnesia.

Size of pills. — of light vegetable matters they should not exceed from 3 to 4 grs — of heavy metallic substances from 2 to 8. —

Bolus — where the substance is light & the capacity of swallowing great. —

Lozenges — are formed of pleasant aromatic substances with gum. honey & sugar, or tragacanth which must be soluble in the saliva, or if they contain unpleasant substances, they should be disguised, various shaped.

Conserve, are formed by the union of vegetable substances with sugar for their preservation.

Electuaries, by the union of re-  
gectable powders for the pur-  
pose of administration.

~~The~~ quantity of sugar and  
honey vary for each substance.

Mixtures are preparations of sub-  
stances where it is necessary  
to disguise the taste & appear-  
ance of the substance given  
& consist of this as the princi-  
ple, which is not necessarily  
soluble, & gum, sugar & aromat-  
ics. — the proportions of the latter,  
is —  $3\text{ij}$  &  $3\text{vj}$  — or the yolk of an  
egg — may be added, which  
should be thoroughly incorpora-  
ted. It is better <sup>to</sup> form the solu-  
tion of them first with part of  
the water before adding the  
substance itself & the remain-  
der of the water as if the  
medicinal substance is oily  
— it is added to the gum it  
would be impossible to make



~~the~~ mixture afterwards. as for instance the bl Miat.

of solid matter there should not be more than  $\frac{1}{2}$  to  $\frac{3}{4}$  — If the substances can be mixed afterwards with the water, it is better to incorporate them before adding it. — The volatile oils — are used to flavour mixtures. Large quantities of gum acidifies in warm weather.

Solutions. In this case incompatibles must be more avoided than in the case of powders, as solution favours decomposition, as Sulph Ferri & Carb Potassa.

Infusions are made by steeping vegetable matters in water — hot or cold, if the former boiling must be avoided, — There are some substances — which do not bear heat, as the aromatic principles which

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they contain are volatilized, ~~the~~  
or if they contain starch ~~the~~  
is acted upon, as Wild cherry-  
bark, & Colombo. —

Decoctions — are made by boiling  
the substances in the hot men-  
struum. The process should  
be conducted in a close-  
vessel, to exclude the at-  
mospheric air, & retain the  
volatile matters, & too long boil-  
ing should be avoided.

Unies, solutions in wine of sub-  
stances, so as to avoid the spur-  
is of Tinctures & at the same  
time preserve the substance.

Tinctures, formed with recti-  
fied spirit or diluted alcohol.

Undiluted alcohol <sup>is</sup> employed —  
where the substance is only solu-  
ble in this, diluted where partly  
in water & partly in alcohol.

Unies pure, why. —

Vinegars — what.



58.  
Filters - are to clear fluids -  
Displacement. The principle  
is, that one fluid not con-  
taining the active principles -  
of a substance, displaces that -  
by which this substance is medi-  
cated, & drives it off unchanged.

### Lecture IV - V

Syrups. are formed with vegeta-  
ble matters & sugar by ebullition,  
in order to preserve them & ren-  
der them easy to take. The propor-  
tion of sugar is  $2\frac{1}{2}$  lbs to the  $\text{bj}$  of  
water.

They are simple or medicated.  
The latter are formed by uni-  
ting the medicine either in in-  
fusion or decoction with sugar.  
Boiling may be used, if the sub-  
stance be not injured by heat,  
if it be, <sup>it</sup> must be added  
to the syrup already formed. Some-  
times the Tinctures are used  
and the alcohol distilled off,  
or evaporated.

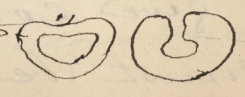


Synmels are formed by adding the vinegar of the substance to the sugar and honey.

Liniments are liquid substances of soft oleaginous consistence which are applied with the hand.

Ointments are fatty matters in the solid state, either simple or medicated, they are generally mixed with some substances to give to them greater consistence.

Cerates have greater consistence than ointments, and contain wax. they can be spread at the ordinary temperature.

Plasters are of still greater consistence & tenacity & have to be spread with heat, not allowing of being spread at the temperature of the atmosphere. So that the Plaster plaster is an ointment. They are spread with an iron on leather. The shape may be given with strips of paper, or tin plates with a cavity in the centre   
Thus, —



Cataplasms or poultices are formed of soft demulcent substances, which are tenacious and apply themselves to the surface equally without spreading or running off. They can be mixed with water when the substance used is viscid, either with or without heat, as for instance the mustard cataplasm. If the medicinal substances are not miscible with water, add them to some substances which are as flaxseed-meal, in this way may be used, hips, scammonium leaves, tobacco &c.

In the formation of cataplasms, vinegar & alcohol are sometimes used with a view to their medicinal properties. Milk is sometimes employed to give consistency, and care must be taken to have it



fresh. Sand may be placed <sup>it</sup> over the surface of poultices. Vapours, these include acridous substances which are used sometimes as inhalations, they will be treated of directly.

Parts to which medicines are applied.  
To the stomach, it is not necessary to enlarge upon this, as it will be treated of as we proceed.

Rectum. This part is made use of in the administration of remedies, when it is impossible to bring them in contact with the stomach, as for instance where there is difficulty of deglutition.

There are two indications in the application of remedies to the rectum & two ways in which they operate—

1. They irritate the part and produce alvine evacuations, from the bowels—
- 2d They affect the mucous mem.



harm, & extend their impres-  
sion to the system at large.  
These two modes of operation  
are incompatible, but it may-  
be so managed that either  
one or the other will result, &  
they may be retained when  
an anodyne is added.

In either case care should be  
taken not to allow of too spee-  
dy a discharge of the substan-  
ces used, or the full effect  
will not be produced. A warm  
towel is therefore to be applied  
to the fundament & held  
there.

The materials injected should-  
be at the temperature of the  
body.

When it is intended to pro-  
duce some effect upon the  
system, the medicine given  
should in three times the a-  
mount taken by the mouth, or  
if the substance be exceedingly



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active only 2<sup>nd</sup> the amount of  
the whole quantity injected,  
should be small with the  
view to its retention.

The application of medicines  
to the rectum affords us con-  
siderable advantage, when  
the stomach is too much ac-  
customed to the operation of  
medicines, for by changing the  
part to which applied, the system  
may be made to experience  
their whole effect.

When the stomach by repetition  
loses its susceptibility, & requires  
a larger dose, the rectum  
may still retain its suscepti-  
bility & a duplication of the  
amount required for the sto-  
mach would be hazardous, if  
applied to the rectum, the  
system yielding to its inordi-  
nate influence in this way,  
when it would not if applied



to the stomach.

It moreover places at our option, an additional organ.

Substances applied to the rectum may be either solid, or liquid. Suppositories are solid

Clysters, <sup>+</sup>enemata or injections - are liquid or consist of - solid matter diffused in - a liquid vehicle, they should be thoroughly mixed, particularly where there is a quantity of an energetic article in them as the St Terbinth. They are generally made of viscid substances, as sugar oil &c if a solid substance is to be suspended in it

The quantity of the vehicle should vary with the nature of the medicines & the effects to be produced. If the enema is to



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be retained, the quantity should be as small as is compatible with convenient administration. If intended to operate upon the bowels, the bulk should be larger. In the former case  $\frac{3}{4}$  i to ii - in the latter  $\frac{1}{2}$  j - for an adult.

The instruments used are the syringe. Douche & Bladder.

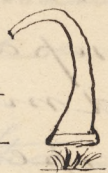
Skin The modes of this species of application are numerous. The cuticle may be allowed to remain or it may be removed.

The applications may be used in the form of vapour, of a liquid or a soft solid & may come in contact with the whole surface of the body or only a part.

To the sound skin. Vapours may be applied under the bed clothes, with hot bricks wrapped in flannel clothes moistened. or through a tube by



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means of burning alcohol -  
at one end & the other  
placed beneath the  
clothes. Alcohol by burn-  
ing forms carbonic acid  
and water, which is directed  
in a current through the tube.  
A tub is sometimes used -  
over which the patient sits -  
surrounded with blankets. -



Some solids may be applied  
to the skin in the form of  
vapour, as sulphur, sulphuret  
of mercury; in this case a  
box is made use of.

Liquids are applied to the  
sound skin as lotions, baths,  
emucupia & pediluvia

Potions are commonly used to  
produce some local effect,  
as for instance lead water.  
These applications may also  
be made to affect the sys-  
tem generally, the skin either  
by sympathy or absorption ex-  
ercising some agency over it.



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as in the application of mur-  
viatic acid & bark, the en-  
tire skin over the whole body  
has been shown to possess  
considerable absorbing power,  
so as to afford a means of  
nourishment.

Baths are inconvenient for  
grown persons, but may be  
used in the cases of children.

Solids in the form of <sup>ointments</sup> ~~ointments~~  
& cataplasms &c will produce  
their effect through the skin, &  
<sup>ointments</sup> ~~ointments~~ liniments may be fa-  
cilitated in their operation  
by friction, as lung-bad & U. Sodum  
they must be applied to parts  
where the cuticle is thinnest.  
By removal of the cuticle

In this case absorption is more  
active. This is the endemic  
mode of application, by it sub-  
stances act more energetically,  
as is the case with mercurial



8  
irritant when it is required  
to produce salivation. —

This method was first proposed  
by D Lambert, & subsequently  
experimented with, by Lesge-  
nard, & Barry. — it is useful in  
a variety of cases, where for in-  
stance, the patient can not  
take the remedy by the stomach,  
or where it is necessary to make  
use of every measure to bring  
about a rapid action of the  
medicine.

It is useful in obstinate local  
affectious, where the remedy can  
be applied in the vicinity, as in  
glandular swellings.

In the cases of children, where  
the remedy cannot be taken  
by the mouth and is diffi-  
cult to be administered.

Instances. Nuxioma to a blis-  
ter, if the stomach be irri-  
table. Colchicum or veratrum  
in gout, when the stomach,



loses its susceptibility, & in  
neuralgic affections.

The effect is interfered with,  
when the substance applied  
is corrosive, as Tartar emetic,  
and is not practicable when  
the medicine requires a large  
dose to operate, as salts. In  
the first instance, the irritation  
produced is so great as to  
prevent absorption. Ipecacuan-  
ha produces nausea when  
applied to the skin in this  
way - when Tart. Ant. will not.

The skin is to be deprived of  
the cuticle <sup>by</sup> with a blister, & 3 or  
4 in square is large enough. The  
substance, <sup>is to be,</sup> sprinkled on in pow-  
der, or it may be mixed with  
flour, the latter substance  
however is apt to form a paste,  
& impede the absorption of the  
substance, arrow root better. If  
it be soluble, a solution may



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be made, the quantity to be  
used is about 2 cc the amount  
to be taken by the mouth.  
The activity of absorption varies  
in the different parts, it  
is most active over the stomach  
& on the inside of the thighs,  
& legs. The medicine should  
also be applied in certain po-  
sitions relative to the disease.  
Thus in glandular swellings be-  
low the part affected, in the  
course of the absorbents.

Lungs. The Bronchial tubes &  
pulmonary air cells. It is sta-  
ted that medicines operate  
on these parts with greater ea-  
siness, in consequence of the  
more rapid absorbing power which  
is possessed by them. It is dif-  
ficult however to accomplish  
this mode of administering.  
vapours may be used in this  
way, but solids cannot in



consequence of their irrita-  
ting mechanical properties.  
A machine for curing con-  
sumption by healing the ul-  
cers of the lungs was introduced  
several years back, its design  
was to introduce fine powders  
as myrrh &c into them, but this  
has been consigned to oblivion.  
Inhalation may be accom-  
plished by impregnating the  
air with certain substances, as  
for instance tar rosin &c or  
by introducing gases from a  
bag, or by means of the inher-  
ber, hot water being medica-  
ted & then its vapour inha-  
led, ether & like substances  
may be inhaled from a bottle  
with two tubes, which can be  
readily made upon the spot.



## Section VI

### The mucous membrane of the Nostrils.

When brought in contact with this portion of the nose. Medicines may operate by sympathy upon contiguous parts. They may be used in the solid form, or as vapours, & produce an immediate effect upon the brain, in this way stimulants applied to the nostrils revive a patient who has fainted.

They may act by revulsion as in the case of head ache - ophthalmia &c.

Or they may alter the morbid organization of the schneiderian membrane, as in the case of polypus. &c.

### Inside of the Mouth

Substances acting in this way are called masticatories. They



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stimulate the adjacent parts  
+ produce a flow of saliva, in  
this way, tooth ache can be  
cured.

### Injectives into the blood vessels.

Substances taken in by the  
chyliferous ducts are introdu-  
ced so slowly, and are so qual-  
ified as to their acid properties,  
that the violent shock which  
their sudden introduction  
would create is not felt, while  
on the contrary, their direct  
introduction is followed by  
injurious consequences. If in-  
troduced slowly, the system is  
accustomed to their impression.  
Hence it appears to me that  
the employment of this means  
of medication is hazardous,  
independent of the difficulty of  
accomplishing it & the risk of  
allowing air to enter the vessels.



## 14 Classification

The advantages of classification are, the facility it affords the memory, & the mode of teaching, by enabling us to bring together such substances — as are analogous in some particular & studying them in classes. Hence <sup>some</sup> ~~extensive~~ similarity of characters affords the basis of it & these are selected in accordance with the end proposed.

It is extremely difficult however in consequence of discrepancies which may exist, & the impossibility of reconciling many opposing circumstances, & in consequence of one article belonging to several classes. —

The various methods of classification are the following. —

Alphabetically. This does for a Dictionary, or in a Descriptive



175.  
but it is not strictly scientific  
it is employed in the works  
of Chevalier & Richard. — to

Natural History. This is unfit for  
physicians, but answers for re-  
ference, when the whole ac-  
count of substances is sought for.  
It has been adopted by Geyser,  
Fee, & Richard. —

Chemical composition & relations, —  
too fluctuating. — Richter

Mechanical. Useful for the Apoth-  
ecary. Quibout. —

Sensible properties. Uncertain

The best classification is that  
founded on their relations to  
the living system. —

A classification has been found-  
ed upon the specific effect  
of medicines in the cure of dis-  
eases, or the power they possess  
of removing specific diseases, —  
from this theory are derived  
the terms, antiscorbutic, antivenere



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real, antiphlogistics &c. But distinct & different remedies may be used & be entitled to these appellations, each efficient, & yet each operating so differently, & in the case of antiphlogistics including so vast a range that, it would include almost the whole catalogue, as for instance emetics, purgatives &c are all antiphlogistic. In the case of Antispasmodics, baths, stimulants & sedatives would all be ranged under this class, as they may prove serviceable according to circumstances. Antifebrile in the same manner. A few of these terms have however been retained. —

The best is that which is founded upon the relations which medicines bear to the healthy system, or their physiological effects from which is to be deduced their efficacy in removing pathological conditions. This is —



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close analogy between, the ~~two~~ effects, the one being very similar to the other, under particular circumstances.

The method I have adopted has been followed just by Cullen, & since by Alibert &c. - It has the advantage of familiarizing the student with the effects of medicines & their application to disease.

Substances used remedially act either on the living body, or on extraneous matters contained within the body, & serving as a source of disease. The former constitute the great mass of medicines & it is to these alone, according to the definition before given, that the term medicine is strictly applicable. The latter however for the sake of convenience, may be considered as medicines (Anthelminitics & Antacids) and



A  
are here ranked in a distinct group.

The first division therefore is in to medicines which act upon the living body, and those which act upon foreign matters contained within the body.

Medicines belonging to the first are included under two divisions. viz general remedies which operate upon one or more systems of the body. Local remedies acting especially on particular organs. —

General remedies are divided into two sets. Stimulants & sedatives

Stimulants are slow & lasting — called permanent, rapid & transient denominated diffusible

Permanent stimulants, are divided in to such as produce some astringent effect, in addition to the permanent stimulation, which



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are termed Astringents, & such as produce tonicity without astringency, called Tonics.

Diffusible stimulants are such as act upon the heart & arteries, called Arterial stimulants & those which operate upon the cerebro spinal system in addition to the above effects, Cerebro nervous stimulants.

Cerebro nervous stimulants are again subdivided, into cerebral stimulants producing a decided impression upon the brain, sometimes called stimulant narcotics, & nervous stimulants which act upon the nervous system at large without affecting the brain, sometimes called antispasmodics. Sedatives are divided into arterial sedatives, those which affect the heart and arteries exclusively, (refrigerants). Nervous sedatives which affect also the



80  
Nervous system, or sedative  
Narcotics.

Local remedies are divided  
into 3 sets. 1<sup>st</sup> Such as affect the  
functions of a part. viz Emet-  
ics. Cathartics Diuretics Dia-  
phoretics. Expectorants. Emmen-  
agogues. Sialagogues. Erbines.

2- such as affect the organiza-  
tion of a part. viz Rubefacients  
Epispastics. Escharotics. —

3 Medicines operating mechan-  
ically, Demulcents. Emollients  
Diluents.

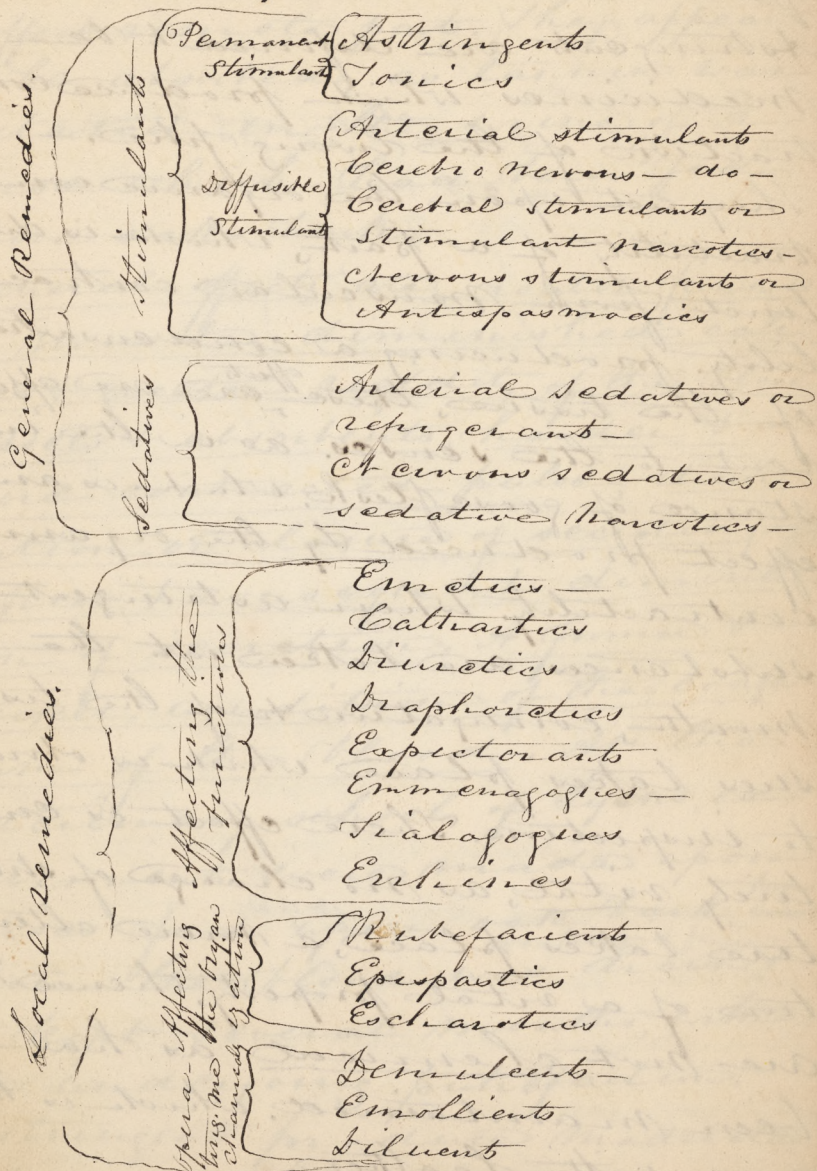
Medicines having a peculiar  
action & therefore not classified.  
Ergot. Nux vomica arsenic Mer-  
cury & Iodine

Medicines acting on foreign  
substances within the body viz.  
Antacids. Anthelmintics



# Tabular view.

## Substances acting on the living-body—



On substances contained in the body  
 Not classified—
 

- Antacids
- Anthelmintics
- Ergot. Nux. vomica.
- Arsenic Mercury Iodine



22 Class I—

Astringents—

General observations.—

Astringents are defined to be medicines which produce contraction of the living <sup>all the time being</sup> fibre.—

They act upon the organic contractility of a part, which is distinct from muscular contractility, producing a condensation of the tissues, these <sup>effects</sup> are are apparent to the senses, as in the instance of goose flesh, which is an effect produced by the organic contractility. When astringent substances are taken into the mouth, coagulation of the tissues takes place which is obvious to inspection. Their effect is entirely vital, as no change of structure takes place, <sup>it is</sup> a mere alteration of a vital property, hence they are not chemical as has been maintained, which is the case with leather.

Their local effect is most obvi-



ous, wherever they are applied to a part, Their action <sup>however</sup> may extend over the whole system & affect remote parts. They appear to be absorbed, as tannin was detected in the urine of a horse which had been fed upon oak bark.

General effects are, greater firmness of muscle, diminished calibre & greater rigidity of the blood vessels & absorbents, harder & more contracted pulse, diminution or closure of secreting orifices, & consequent diminution of secretion. A firmer & thicker condition of the coagulum of the blood. At the veterinary school of Lyons, experiments were made upon horses fed upon oak bark, <sup>from</sup> ~~in~~ whom the blood was drawn & it kept several months, without undergoing putrefaction. Astringents produce moderate & permanent excitement of organic life, but have little



gely  
Influence over the nervous system, or the functions of animal life, in the latter particular they differ from Tonics. —

Indicated in —  
unhealthy discharges, from the blood vessels, or by secretion & relaxation of the tissues. —

1- Unhealthy discharges —

They close the secreting or bleeding orifices. Not applicable to all cases indiscriminately, but where weakness of the vessels exists, or where the discharge is local, or sustained by habit the original cause being removed.

They may however be used when the discharge is so profuse as to render its suppression desirable, although at the risk of aggravating the original cause. Thus in some forms of diarrhoea, when there is still some irritation astringents must be made.



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use of to suppress it, on ac-  
count of the rapid exhaus-  
tion of the patient.

Contra indicated by the  
existence of any morbid con-  
dition of which the discharge  
is a mere effect. Thus Bilious  
diarrhoea may arise from  
the inordinate action of the  
liver, which it is necessary  
to allay, & to relieve the con-  
gestion of this organ.

They are useful at the termi-  
nation of inflammatory af-  
fections, after the local or  
general excitement by which  
they are contra indicated  
has been removed by means  
of antiphlogistics, and if the  
discharge is kept up from  
habit, the primary cause be-  
ing removed, they come in  
properly.



In hemorrhages they increase the irritations if used too soon. They are useful when thus judiciously applied, with this indication, in Stranguria, Chronic Dysentery, Diabetes, Cataract of the bladder, Excessive sweating, Dropsical swellings - with relaxation & All Hemorrhages.

## 2. Disorders with relaxation of Tissue.

When the system is left in a state of relaxation after acute diseases, all inordinate action being removed. \* Here astirgents are useful although no unhealthy discharge exists, & in combination with Tonic's.

In chronic complaints where such a state exists as in Scrophula & Rickets.

Here they <sup>may be</sup> made use of in



Whether from enlarged surfaces or  
lesions of the coats. —

Ulcerations of the coats of the  
bowels — in dysentery require the  
use of medication. —

Fever with night sweats &c.



88  
The form of baths. or washes.  
Applicable in cases of in-  
creased mucous secretions, af-  
ter the subsidence of inflam-  
mation, as in Gonorrhoea, dis-  
charges from the Prostate, ex-  
cessive perspiration, Hemorrhage  
from local parts. & in cases  
of relaxation as. prolapsed  
anus, uterus, vulva & flabby ul-  
cers. —

In some instances it is im-  
proper to employ vegetable as-  
tringents to inflamed parts, in  
the first instance, because  
they are irritating in their ac-  
tion. some of the Mineral as-  
tringents may however be used  
in these cases, as they exercise  
a sedative action, as for in-  
stance acetate of lead.

All astringents may be employ-  
ed with greater safety externally,



as in this case they do not<sup>1899</sup>  
affect the system which they  
might do if employed in-  
ternally by increasing excite-  
ment & producing stimula-  
tion.

Local astringents are some-  
times beneficial even in cases  
of actual inflammation, but  
they must be used at its com-  
mencement or termination, in  
the first instance they eradicate  
the incipient inflammatory ac-  
tion, by expelling the blood & in  
the second they remove the se-  
quelae, viz tumor and congest-  
ion of the vessels. Before excita-  
bility is too much increased in  
the first instance, and where it  
has been diminished in the  
second.



20  
Astringents may be divided  
into two sections, Vegetable +  
Mineral.

The former having a certain  
identity of character depending  
upon similarity of composition.  
The latter only possessing as-  
tringency in common.

Vegetable astringents, owe their  
properties to a peculiar pro-  
ximate principle, tannin, com-  
bined with aromatic + bitter  
principles.

Gallio acid is oxygenised -  
tannin formed by contact  
with the atmosphere. —

There are two kinds of tan-  
nin one forming greenish  
~~black~~ black precipitates with  
iron. The other, a <sup>benzoin-like</sup> yellowish  
precipitate, as ~~seen~~ with Cin-  
chona.

Mode of preparation

Submit galls to dilute Etho.  
in the <sup>broken</sup> beak of a retort, + in-  
sert the end <sup>into</sup> ~~the~~ an airtight



vessel, the Ether dissolves the  
other matters leaving the  
tannin, which is dissolved  
by the water of the Ether, which  
is coloured & from its density  
sinks to the bottom. This may  
be re-washed in ether & sep-  
arated by evaporation.

When pure it is nearly colour-  
less. Astringent without bitte-  
ness. Exposed to the air, it  
absorbs oxygen. Soluble in wa-  
ter but not in Ether or Alco-  
hol, except diluted. It pre-  
cipitates the metallic salts-  
forming tannates, and also  
the alkalies forming insoluble  
compounds. It precipitates ge-  
latine & forms leather.

It is purely astringent with little  
or no tonic power & therefore  
can in some cases be used  
where excitement exists.

Used in uterine hemorrhage  
to dose 2 or 3 grs in pil.



Vegetable Astringents  
Oak Bark.

Genus Quercus. 80 species are known. 25 indigenous to the United States.

Q. robur & Q. undulata are peculiar to Europe.

Q. alba, ~~the~~ white. Q. tinctoria ~~the~~ black, falcata chestnut & Montana are natives of this country.

The three, alba, falcata & Montana, are similar in properties, but the tinctoria is somewhat different from them.

The white oak of this country resembles that of Europe or the English white oak. It is characterized by the whiteness of its bark externally & <sup>internally, it is of light brown;</sup> its coarseness. It imparts its virtues to water. The under layer is richer in virtues depending upon the amount



93.  
of tannin which it contains.  
Its odour is feeble & its taste  
is rough astringent, and bitter  
ish.

It yields its properties to water  
and alcohol.

Tannin is the active ingredi-  
ent.

The bark collected in the spring  
of the year, and that from  
the younger branches is most  
rich in this principle.

Black oak bark is dark colour-  
ed externally, extremely astring-  
ent, and bitter & tinges the sa-  
lwa yellow, it is used as a  
dye & is known in commerce  
by the name Quercitron. This  
article is used in tanning. But  
in consequence of the colouring-  
principle the other species are prefer-  
red. Menstrua the same.

As a medicine the black oak  
bark is less used internally,  
from its bitterness & irritating-



As it sometimes purges  
qualities, externally it does  
not produce stimulation but  
is objectionable from its ten-  
dency to colour the skin.

Bath are more employed ex-  
ternally than internally. —  
Oak bark is employed as a  
bath in the cases of chil-  
dren who are labouring un-  
der rickets &c It is also used  
in Scorbutica, sore throat in  
some stages. piles &c in a doc-  
ma of the extremities. &  
in Punctures to ulcers.

Forms. Powder. dose 30 grs. —

Decoctwn.  $\mathfrak{z}\text{ij}$  — formed by adding  
 $\mathfrak{z}\text{ij}$  <sup>to  $\mathfrak{vi}$</sup>  & boiling down to  $\mathfrak{vj}$ .

Extract. dose 20 grs.

Acorns are employed roasted  
& made into Coffee, Empyrenma-  
tic product.



## Galls

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Eccrescences on the branches of the Q. infectoria, a small oak which grows in the Levant. They are produced by a small insect the Cynips quercus folii, which punctures the bark & deposits its egg. The galls are in a perfect state before the egg is hatched, but after this is accomplished, the insect feeds upon the interior and destroys its structure, hence galls thus preyed upon are of less value as they are lighter. And two varieties are found in commerce the blue and the white. As the Q. infectoria grows in Syria in the neighbourhood of Aleppo, they go by the name of this place whence they are carried to Europe and India.

Galls are smooth, cylindrical <sup>with tubercles</sup> & of an ashen leaden colour. as large as a <sup>pea to a</sup> nut.



They are hard solid, brittle,  
with a flinty fracture & a  
striated texture, & a cavity in  
the centre. Powder grayish. -  
No odor & a bitter astring-  
ent taste.

Active principles are soluble  
in water & alcohol.

The most interesting ingredients  
are tannin & gallic acid.

In preparing a solution of galls  
it is impossible to obtain per-  
fect transparency as the tan-  
nin absorbs the oxygen of the  
atmosphere.

#### Tests & Incompatibles.

Sulphate of iron, & salts of iron.  
Black precipitates.

With Cinchona flocculose yellow.  
& the opalescence of quinine -  
is changed.

Opium. Alkalies. Lime water &  
gelatine. insoluble precipitates.

Galls are used in the forma-  
tion of ink. Their medical,



21  
uses are identical with those  
of oak bark. They are some-  
times employed in a tympa-  
nytic state of the abdomen  
caused by the secretion of gas  
where debility & want of tone  
of the membranes of the gut  
exists, causing its absorption.

They are sometimes used  
as the antidote to Tartar Emet-  
ic. & poisonous vegetable alkalis,  
rendering the poisonous  
substance insoluble. Some-  
times the compound formed  
is active as a tannic gallate  
in which case relieve the  
stomach & then combine the  
galls with a purgative,  
used externally the same as  
oak bark. <sup>Infus</sup> Infus Gallarum.

Syrup of Galls - made by filling  
a teneup with Tr Gallar. then  
placing cross wise lines or two  
forks, upon which are placed  
lumps of sugar, then fire the  
Tr. which melts the sugar, and



thickens the Tr. when it has-  
ceased to burn. — Dose a  
teaspoonful.

Kino. —

This concrete substance was  
introduced to the notice of  
the profession by Dr Booth & it  
was derived from African-  
varieties.

1. African from the Pterocarpus  
cruciacus a specimen  
of which was sent from Afri-  
ca by Messrs Park. This article  
is not now brought from Africa  
& is not to be had.

2. Jamaica from the Coccoloba  
uvifera or sea side grape,  
scarce.

3. Botany Bay Kino, from the  
Eucalyptus resinifera a large  
tree growing in New Holland.  
the juice flows from the  
bark & hardens in the air.

4. East India or Ambogia —  
from the Nauclea Gambir



99.  
this variety is chiefly used. It  
is obviously an extract  
Properties. In small angular  
deep brown shining fragments,  
formed by breaking down the  
masses of the extract.  
No smell.

Taste rough & astringent, a little  
bitter then sweet.

Powder light brown or reddish.  
Soluble in water & alcohol.

Ingredients Tannin & extractive  
Tannin the active <sup>ingredient</sup> ~~precipitate~~  
which affords a dark green  
precipitate with sulphate of  
iron.

The incompatibles the same as  
of galls.

Used extensively as an astring-  
ent, and is frequently added  
to the chalk mixture.

Powder. 10 to 30 grs. Infused 3ij  
to 5-3j. Dose 3j- to 3ij.

Tr. Kino becomes gelatinous if  
kept. Dose - 3j. <sup>℞ - To opii 6 - 3j</sup>  
Powder to hemostatic. <sup>Infus. kino - 3j</sup>



## Catechu.

Is the Extract of the Acacia catechu, a plant which grows near Babar in India, it is a moderate sized tree. This drug from its resemblance to earth was called Japan earth, it is procured by boiling the chips. Two kinds - Bombay & Calcutta. To a certain extent it resembles Kino. It occurs in commerce in cakes, masses or lumps. Colour rusty brown more or less dark, internally from a pale reddish or yellowish brown to a deep liver colour.

No smell. Taste astringent. Bitter taste followed by a sense of sweetness.

It is brittle & breaks with a resinous fracture.

Powder lighter coloured than Kino. Soluble in water & alcohol.

Impurities. sand dirt & sticks.



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A white Kind is spoken of.  
Ingredients tannin & extractive.  
Chemical relations same as those  
of kino.

Dark coloured is richest in  
tannin.

Used as an astringent. in  
discharges &c. A piece dissol-  
ved in the mouth an ex-  
cellent remedy in relaxation  
of the uvula. & imitation of the  
fauces.

Applied to fleshy ulcers.

Kino is preferred for internal use  
as it is purer. but as it is prone  
to stain, catechu is preferred ex-  
ternally.

Used in powder. dose 10 to 30 grs

Infusion. — do — as Kino. —

In catechu. — 3j to ʒij

The tincture does not change.



## Krameria.

Rhatany is the extract of the root of the Krameria triandra, a plant described by Ruiz & Pavon, as growing in Peru, near the city of Huancuco.

It is a small shrub, with silky leaves, & red flowers, the root is branched & very large, having a body & numerous ramifications. As it comes into the market in large & small pieces - having a reddish colour externally, with a lightish colour internally, it is separated into ligneous & cortical portions. It has no smell & the taste is astringent & sweetish.

The cortical portions possess the active properties.

The powder is of a light red colour.

It imparts its virtues to water & alcohol. and the colour is -



103  
blood red or deeper.

The active ingredient is tannin.

It forms an ink

Medicinal properties -

Introduced by Rinz - Found etc -  
used by the ladies for rubbing -  
their legs - & used in Stran-  
haca & Dysentery -

Used as an astringent as -  
Rinz - In Stranhaca & Hem-  
orrhages. -

Used in powder - dried -

Infusion -

Decoction -

L



Hæmatoxylon. —

Logwood — from the Hæmatoxylon campechianum

Character of the Tree —

Campeachy wood. — Introduced into commerce as a dye

It is the heart wood which is separated from the white sap-wood. —

Comes in logs — of a dark color externally from exposure — internally deep red — it is compact — hard & heavy, having a slight peculiar odor & a sweet astringent taste. In the shops in chips or rasped. —

It imparts its virtues to water and alcohol.

It owes its coloring properties to a peculiar principle, called Hæmato<sup>is</sup>xylon. The astringent principle is tannin.



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Logwood is a mild astringent. It tinges the urine - but not the bones. -

used in the diarrhoea of children -

Given in decoction & powder -  
Dose of the powder - 20-30 grs -

Decoction (made by - adding -  
℥i in a pint and a half  
of water to ℥j - dose - ℥i - ℥ij -

Extract of a deep ruby color -  
glossy - shining, friable - sect -  
fasting astringent - It may be given -  
in solution or pile. - dose -  
10 to 30 grs -

Logwood sometimes given in  
Milk. -



Geranium maculatum

Cranebill - Native -

Characters of the plant. -

Root gathered in autumn -

Found in pieces - 1 to 3 inches in length -  $\frac{1}{2}$  in thickness, flattened, contorted & wrinkled, with slender fibres - Brown externally - light red internally. - Taste astringent, no odor. -

Menstrua - alcohol & water. -

Tannin active principle -

Used in diarrhoea - summer complaint of children - & aphthous ulceration of the mouth -

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Blackberry.

The root of the *Rubus-vellosus* -  
& *R. -lurialis* -

Characters of the plant -

Fruit contains malic acid vegetable jelly & slight astringency -  
hence the fitness as a diet when made into Syrup in diarrhoea -

Characters of the root -

bark most active & young radi-



Decoctiva - 3i to ʒij - reduced -  
to ʒj - Dose - 3i to ʒij -  
Dose of the powder 20-30 grs -  
For children it is sometimes -  
boiled in milk. -

---

cles - taste astringent & bitter -  
Menstrua alcohol & water -  
Tannin, -  
Uses - the same -  
Powder - 20-30 -  
Decoctiva 20 to 30 grs -



Uva Ursi. — Leaves of the —  
Arbutus uva Ursi.

Found in the Northern States &  
in the sandy soil of New Jersey —  
Also an European plant. —

A small trailing evergreen shrub,  
Leaf obovate thick, shining —  
coriaceous, smooth, of a light-  
green color, reticulated beneath.  
No odor when fresh, a little in-  
the dried state. —

Taste bitterish astringent and  
sweet. — Powder green.

Active ingredients Tannin & bit-  
ter extractive

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Pipsissewa.

Chimaphila umbellata. — Plant-  
wintergreen. —

Character of plant —

Grows in Europe Asia & America —

Leaves — form, shape & appearance. —

Color greenish — peculiar odor —

Taste astringent, bitter & sweetish. —

Preparations Water & Alcohol. —

Tannin & extractive. —



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Yield their properties to water & alcohol. —

Uva ursi is an astringent — tonic — at the same time has a tendency back upon the urinary organs — As some of the principles have been detected in the urine  $\frac{1}{5}$  (minutes) after exhibition. — It does not increase but rather restrains the flow of urine. —

Used to check inordinate secretion. — Has been employed in calculous complaints, <sup>and</sup> ~~but~~ may alter the secretion but does not dissolve the stone.

Catarrh of the bladder — Debility following inflammation of the bladder.

Incontinence of urine — Gleet — hemorrhagia &c — Dose —  $\mathfrak{z}$  i to  $\mathfrak{z}$  i —

Secretions —  $\mathfrak{z}$  i to  $\mathfrak{z}$  i — Dose  $\mathfrak{z}$  i



~~Pomegranate.~~

The medical properties are similar to the preceding - But it increases the flow of urine. -  
Used in dropsy. -

In scrophulous both internally & externally. - Where there is some local inflammation, but the system generally is debilitated. -  
Some forms of dropsy - with debility. -

Decoction - Zij - to oij - Boiled to two - dose - tea-cupful. - 3rd

Extract. - 20 to 30 grs. -

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Pomegranate - Granatum L.

Rind of the fruit of the Punicagranatum. -

Character of the rind. -

Tannin chief ingredient. -

Used in decoction, as a gargle - &c. -



Red Rose - *Rosa gallica* -  
Buds - or unexpanded petals -  
Pyramidal form & red - odor  
aromatic, taste astringent.

Tannin. -  
Fecible astringent -  
Used as adjuvants. -

Confection made by beating  
up the fresh buds with syrup -  
imported -

Compound infusion of red roses -  
contains sulphuric acid - dilut. - &  
sugar. -

Rose water what -  
Made from <sup>*Rosa centifolia*</sup> ~~Red Rose~~ -  
Uses of Rose water.

Unguentum <sup>aqueae</sup> ~~Rosae~~ <sup>ad</sup> - Cold  
cream. How prepared. -



111. Mineral Astringents.

Are possessed of the common power of astringency, but have some other peculiar effects. —

Alum. — Alumen —

A double salt — composed of Sulphate of potassa & sulphate of alumina —

Soda or ammonia may be substituted for the potassa & form a similar salt. —

Found native, in certain soils — efflorescing on the surface. Procured by —  
Lixivation. —

In Europe made from alum ore —  
By direct union of the constituents.  
also. — Bathmore water —

Characters octohedral crystals —  
white, or slightly tinged with iron —  
effloresces slightly. — Taste astringent  
— sweet. — Soluble in cold water —  
more so in hot, & deposited on  
cooling — Melts in its own water of  
crystallization — then dries. —

Alumen exsiccata. —

Incompatibles are alkalis & their  
carbonates. Lime & magnesia & their



113

Carbonates - Astringent effects -  
precipitate slowly - If directed  
with them, used immediately,  
acetate of lead.

Law - All salts the bases of which  
have a stronger affinity for the  
sulphuric acid than for their own  
acids. - precipitate alumina -

Borax - carbonate -

Sulphates may be used without  
a precipitate - Sulph. Fer. per. ess.

Medical properties -

Astringent, refrigerant, & sedative -  
from the sulph. acid refrigerant.

Diminishes the powers of the stomach  
impairs the appetite - produces spasm -  
nausea with vomiting - In small  
doses constipates. In large doses  
purges - from the irritation it cre-  
ates. - Is not poisonous. -

Uses -

In morbid discharges - as Stran-  
guina - Uterine hemorrhage -  
Menorrhagia -

In Intermittent fever combined  
with nitre. -



## Lead. Plumbum.

Metallic lead is inert, unless some change is effected in it by union with other substances. Furnes are oxidated lead - water - flowing through lead pipes - the carb. - Lead is obtained from the ore -

The effects of the preparations are comprised under two general heads, their <sup>local</sup> irritant action & their specific action, upon the system.

These two to a certain extent are incompatible, as absorption is impeded by the local irritation which is produced. \*

The peculiar character of the effects of the preparations of lead are astriquent & sedative.

~~They~~ reduced vascular action, lowering the pulse, & suppressing unhealthy discharges & abating inflammation.

The poisonous effects arise from the too powerful irritant action



Alums /

In Typhoid fever with hemorrhage -  
depending upon a general mor-  
bid condition of the vessels -  
Colica pictorum - as the effect -  
is here of an astringent nature -  
it is difficult to explain its opera-  
tion - must be specific. - It -  
was supposed to form a sulphate -  
but only the effect remains in -  
the disease not the cause. -

Epistaxis - Bleeding piles - Leech -  
bites - hot solution to erythema in -  
the orifices. -

To check local inflammation - as -  
inflammation of the throat when -  
commencing - in scarlet fever -  
tc. - & all mucous inflammations -

Alum Curd - in ophthalmia - Flow -  
made - Alum whey -

Bread alum escharotic. -

Dose 5 to 10 grs - in pill, - or solution. -

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\* as an instance the acetate -  
may be cited, as in large doses -  
it purges - in small it is ab-  
sorbed. -



113  
Leading to inordinate inflammation, and from the gradual introduction of it into the system. — bringing on  
Lead Colic.

Symptoms. Tormentum & tenesmus with twisting of the bowels in the umbilical & Epigastrium regions. Sometimes nausea & bilious vomiting, anxiety of countenance, facitiation, irregular pains in the extremities, contractions of the muscles, spasms. Palsy, the whole nervous system is affected, the pupil becomes contracted. \*

It is caused by the fumes of lead, by water from lead pipes. — Cider. Seltzer water.  
Handling lead.

Dr Thompson asserts that the carbonate is the only poisonous preparation. but thus Dr Wood does not believe, as it is contrary to analogy. The same properties are found —



constipation, with hard feces &  
great desire to stool without  
the ability to evacuate the  
bowels. —

\* the senses are weakened —  
Death may occur from effusion —  
on the brain. —



111  
throughout all the combinations  
of other metals <sup>with acids</sup> & it is reason-  
able to suppose that the same  
holds with regard to this. It  
is also in opposition to facts -  
as the furnes are capable of pro-  
ducing <sup>noxious</sup> an effect upon the sys-  
tem, and the statement that  
these are converted into a  
carbonate in the lungs needs  
confirmation. The deutoxide  
is capable of producing the  
disease, and it is not  
The sulphate is stated to  
be innocuous ~~from~~ <sup>from</sup> its insol-  
ubility. but I am little in-  
clined to trust to the exemp-  
tion from danger where this  
preparation is concerned, <sup>but</sup> it  
is probably least so of all  
the preparations.

Food may be rendered poison-  
ous from being cooked in  
earthen vessels. ~~the~~ <sup>the</sup> acid acting  
upon the glazing.



+ as for instance the salts of iron. —

capable of union with carbonic acid. —



~~Treatment of~~  
~~acute or chronic~~ poisoning-  
from lead. Free the stomach  
& then give the sulphate of  
magnesium or soda.

Preparations. — Litharge, carbonate,  
acetate, sub acetate. —

Litharge Plumbi oxidum sem  
ivritium. This is the protox-  
ide of lead & is formed by  
exposing the melted metal  
to ~~current~~ <sup>current</sup> of air in a rever-  
beratory furnace. +

It is also obtained from  
argentiferous galena. In which  
case it contains sulphur & of  
lead & red lead as impuri-  
ties. —

Character — In mass it is a <sup>coarse</sup>  
brownish powder, but when  
finely reduced has a yellow  
tint. — No taste or smell. —

It absorbs carbonic acid and  
then effervesces with acids. —

118

And treat the irritation by  
Antiphlogistics. —

+ When the lead becomes oxidized & semi vitrified. —

with small brilliant scales —



170  
The impurities are copper, iron & silica. —

It is not used internally — but is employed in the formation of Lead plaster.

Emplastrum Plumbi. L.S.

This plaster is prepared by boiling together water, oil & litharge. —

The oil and litharge would not unite unless the water were present to assist the formation of the margaric & oleic acids & glycerine with the oil, the acids unite with the oxide & the glycerine is retained in the mass.

This is an instance of true saponification.

The plaster is called diachylon.

It is in the process of being  
a light color naturally &  
becoming dark when  
treated.  
This plant is the same  
as the other - and is used  
for coloring &c. -

Character of Lead

Plumbic carbonates - brown.  
Made of softening lead to  
the form of rings for use.  
Lead pencils - which are common.  
Lead with soap.  
The active role is that the rings  
is decomposed, the lead being  
replaced by the decomposition  
of the rings carbonates.  
Lead is formed which is  
with the oxide of lead.  
It is a soft substance.  
Important - It is heavy, white



L/V is in masses or rolls - of a light color internally & becoming dark colored externally. —

This plaster is the basis of several others — and is used for abrasions &c. —

### Carbonate of lead —

Plumbi carbonas - ceruse. —

Made by subjecting lead to the fumes of vinegar in earthen vessels - which are surrounded with dung. —

The rationale is this - the vinegar is decomposed, the lead becomes oxygenated, & by the decomposition of the vinegar carbonic acid is formed which unites with the oxide of lead. —

It is a proto carbonate. —

Properties — It is heavy, white,

Adhesive plaster for instance.



124  
insoluble, in lumps or powder, and tasteless and inodorous -

In this state it produces lead colic, when manipulated with, from the fumes - or irritation & cleanliness - Hence it has been customary to grind it under water?

Even in the moist state it will give off fumes which may be noxious - This is improved by passing sulphuretted Hydrogen over a mass of the moistened carbonate.

Sulphuric acid & vinegar have been used to counteract the effects. -

It is not used internally. It is used as an external application.

May be applied in powder to ulcers &c.

The first of these is the  
the second is the  
the third is the  
the fourth is the  
the fifth is the  
the sixth is the  
the seventh is the  
the eighth is the  
the ninth is the  
the tenth is the

the first of these is the  
the second is the  
the third is the  
the fourth is the  
the fifth is the  
the sixth is the  
the seventh is the  
the eighth is the  
the ninth is the  
the tenth is the



or <sup>26</sup> in the form of Unguent.  
Made in the proportions of  
℥i - P. Carb - to - ℥vi - of Ungt Simp -  
The Emplastum Plumbi  
Carbonatis is official -  
Under the name of Marys-  
Plaster it has been employed.  
The ointment may be used  
for Herpetic eruptions & for  
Acanthioides. —

Acetate of Lead. Saccha-  
rum Saturni

Sugar of Lead. —

Made by boiling the carbo-  
nate of lead in vinegar  
or by boiling litharge in  
vinegar - concentrating &  
crystallizing. —

It consists - 1 pt acetic acid -  
1 pt - oxide of lead & 3 q  
water. —





128  
The form is that of a white -  
salt, crystallized in (beau-  
tiful needles. - <sup>unitd</sup> conglomerates  
in mass so as to resemble  
white sugar. They effloresce on  
exposure to the atmosphere. -  
Taste sweet and astringent.  
It is soluble in water &  
alcohol.

The solution <sup>in water</sup> is turbid, in-  
consequence of the presence  
of Carbonic acid or salt. -

In compatibles

This salt is decomposed by  
all the acids & salts of the  
acids which are capable of  
forming with lead an in-  
soluble compound. - as  
Sulphuric acid & sulphates.  
Muratic acid & muriates.  
In the latter case the -





130.  
chloride of lead is formed,  
Phosphoric acid, carbonates -  
lime water, & the alkalies. -  
It is incompatible with some  
vegetable substances - as mu-  
cilage & tannin. -  
apium in prescription or ac-  
tate of morphia to be pre-  
ferred to the sulphate of mor-  
phia. -

Some physicians are extreme-  
ly bold in the employment -  
& others are too timid. It  
is best to pursue an inter-  
mediate course. -

bisclaga gave it in large  
doses to a dog & found that  
it produced inflamma-  
tion of the stomach.

I myself saw the first symp-  
toms of colica pectinaria

1831

Mistake - acetate of lead  
taken for a dose of salts.



132  
induced by it, where it was  
given to cure Symplocosis -  
Dr Thompson recommends  
the administration of acetic  
acid with it, in order  
to prevent the acetate from  
being converted into some  
other salt (as the carbonate)  
& thus produce its specific  
effect. But this is question-  
able as the vinegar will  
be digested. -

In consequence of this prom-  
ness to act ~~specifically~~ <sup>irritant</sup>. It  
is better to exhibit it un-  
til 24 or 36 grs have been  
taken and then suspend  
the administration.

Useful in hemorrhages -  
especially in the early -





stages<sup>34</sup> - when it also pro-  
duces benefit by its seda-  
tive property. -

Here  $\frac{1}{2}$  to 3 grs may be used  
every two hours in the  
form of pill - made with  
the crumb of bread, or in  
solution. -

Sometimes it produces -  
pain in the stomach -  
when it may be combined  
with opium, & with ipecac  
uanha for the purpose of  
fulfilling other indications.  
Used in diarrhoea & dys-  
entery & here it may be  
combined with calomel.  
& opium - to correct secre-  
tions or restore those of the  
Liver. -

Rx - opii -  $\frac{1}{4}$  -

Cal -  $\frac{1}{6}$  -

℞ - Sug - lead -  $\frac{1}{2}$  -

from the lungs & uterus! -



36  
In Dysentery highly recommen-  
ded by Dr. Haile. —

It has been used in con-  
sumption, here by its astun-  
gent & sedative influence it  
may be of service — but —  
has no specific action. —

In small doses it is sed-  
ative to the stomach, hence  
it has been employed in  
yellow fever, at the end  
of the first stage of inflam-  
matory action. —

In Hydrophobia & nervous  
cases — case of Hydrophobia —  
cured in Baltimore. —

As a gargle in salivations. —

A solution may be advan-  
tageously employed <sup>as</sup> —

1137



a lotion in contusions -  
inflammations - & infla-  
med blisters &c. Erysipelas -  
is treated in this way. -  
but if the strength of the  
solution be too great, there  
is danger of increasing the  
irritation or producing retro-  
cession. -

Leadwater is prepared of the  
strength of  $\text{Zij} - \text{to } \text{aj} - -$   
For an application to mucous  
surfaces -  $\text{L to } 2 \text{ grs } \text{to } \text{Zij} - -$   
To ophthalmia - as a collyrium -  
To render the salt more  
soluble a little vinegar  
may be added. -

Solution of Sub acetate of  
Lead. called.





140  
Liquor Plumbi subacetatis.  
also Goulards-Extract of  
Lead.

Made by boiling the oxide  
of lead in acetic acid—  
allowing the dregs to subside—  
and filtering—the fluid—  
is a solution of the sub-  
acetate. — the oxide in excess.—  
It would seem to be a  
mixture of the diacetate  
and triacetate. —

When pure it is a colorless—  
fluid—if colored this arises  
from impurities. —

Has a sweetish-astringent  
taste. —

The incompatibles are the  
same as those for the —





142  
acetate, starch and gum -  
also produce precipitates +  
when exposed to the atmos-  
phere the carbonic acid -  
is ~~precipitated~~ <sup>absorbed</sup> upon the out-  
side of the bottles a thick -  
white crust is formed. -

The solution is employed  
externally as a lotion -  
in the proportion of ʒi to ℥j -  
of water. -

It is said to produce local -  
palsy - as sphincter ani. -

Cerate of Sub acetate of lead.

Ceratum Plumbi sub acetat.

lis. Goulard's Cerate -

Made of the solution, wax  
oil + camphor, -

Used for inflamed & abraded





144  
Astringents - & for inflamed -  
Blisters. —

There are some other sub-  
stances which possess as-  
tringent properties, but as-  
these possess properties <sup>also</sup> which  
entitle them to be ranked -  
else where I shall postpone  
the consideration of them -  
until they come under con-  
sideration in other classes. -  
For instance, <sup>preparations of</sup> iron, zinc &  
sulphuric acid, —

12. 145



146

of acids & for inflammations  
 of the lungs.

There are some other substances which possess an-  
 tiseptic properties, but as  
 these possess properties <sup>also</sup> which  
 set off the them to be ranked  
 else where I shall postpone  
 the consideration of them  
 until they come under con-  
 sideration in other classes.  
 For instance, <sup>preparation of</sup> creosote, zinc  
 sulphuric acid, -

147



148

149



140

151



152

153



154

156



